

Periscope

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7. The Localization in the Spinal Cord for the Motor Nerves of the Anterior and Posterior Extremity, Particularly in Apes (*Cercopithecus*), in Comparison with Results of Investigations in the Dog, and Partly also in the Cat. BIKELES and FRANKE.
8. Localization in the Spinal Cord. Further Contribution. BIKELES.
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11. Contribution to the Etiology and Symptomatology of Syringomyelia and Hysteria of Traumatic Origin. CURSCHMANN.
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13. Brief Communication. A Nervous Form of Disease with the Superficial Characteristics of Myotonia. v. BECHTEREW.

7. *Localization in the Spinal Cord.*—Bikeles and Franke cut various nerves in the extremities of dogs, cats and apes, and studied the degeneration in the cells of the spinal cord according to Nissl's method. They draw conclusions only from those cases in which the results are circumscribed and precise. When diffuse changes are found they ascribe them to complications. The results are partly tabulated, particularly for the segmental localization, and partly given in diagrams, especially for the groups of cells affected according to the section of the various nerves. The retro-medial group is always intact, no matter what nerves are cut, but the other nerves are affected differently for different nerves. For the detailed results reference must be made to the original.

8. *Localization in the Spinal Cord.*—(Continued.) Bikeles continues the preceding article, giving careful measurements of the lateral extent of the centers for the various sensory nerves and muscles in the spinal cord of the dog. He considers that these prove that the cells corresponding to the ventral portion of the myotom are situated medially; those corresponding to the dorsal portion, laterally. The long axis of the individual nuclei all exhibit a slight obliquity. The same groups of muscles in the more proximal sections of the body, considered in sagittal direction, are always anterior to those for the other muscles of the same myotom. The arrangement of the cells is unquestionably due to a morphological principle. It gives rise to the fact that sometimes, after section of the spinal nerves, or the spinal cord, the symptoms are peculiar, suggesting nerve localization. Among the minor points developed by this study may be noted, first, that in a group of cells apparently belonging to a single nucleus, nearly half the cells may show no changes by Nissl's method, although the others are distinctly degenerated. It also appears that, with few exceptions, the fibers entering the cord from an anterior root, are distributed to cells in the same segment of the spinal cord.

9. *Hemiplegic Contracture*.—Lewandowsky, after discussing the various theories regarding the contractures of hemiplegia, and reaching the conclusion that there is a general agreement that they are due to a nervous, and not to a direct muscular condition, combats energetically the idea that there is any inhibition, and suggests that there must be irritation of the central nervous system somewhere peripherally from the lesion. He does not believe that the apparent predominance of the flexor contraction over the extensor contraction is due to superiority in power of the flexor muscles. It is at least significant that in tabes dorsalis hemiplegic contractures usually fail. It seems to him that there is an active, or, as he expresses it, a voluntary element in these contractures, and, in addition, a certain element of inhibition of the antagonistic muscles.

10. *Compound Tract Disease of the Spinal Cord*.—Müller reports the case of a woman forty-three years of age, who nearly five years before death had weakness in the legs. The movements of the limbs were somewhat uncertain, although not markedly ataxic. The reflexes were increased. There was a moderate Babinski's sign, especially on the left side. The speech was monotonous, the movements stiff, and there was some hypertonia in the arms and legs. Station, without slight support, was impossible, sensation was normal. The patient ultimately died, and at the autopsy there was found diminution in the size of the whole central nervous system, involving particularly the dorsal region of the spinal cord and the cerebellum. Sections revealed only a combined system disease of the spinal cord. The case, therefore, represented a slowly-developing spinal spastic paresis. Müller suggests that in many of these cases not only the spinal cord, but also the whole nervous system is involved, although possibly this cannot always be demonstrated. In the present case, for instance, there is nystagmus. Of this he recognizes three forms: the true nystagmus, the nystagmus-like twitchings which are not rhythmic, and ataxic movements of the eyes. For the differential diagnosis between multiple sclerosis and combined visual disease he regards the behavior of the visual fields as most important. In multiple sclerosis scotomata frequently occur; in combined system disease, uniform contractions. He regards as the essential symptom of disease of the lateral pyramidal columns increase in the tendon reflexes, hypertonia of plantar spinal reflex, certain muscular changes, particularly the tibialis phenomenon, and paresis of the predilection type, which may indeed lead to paralysis. He discusses at considerable length the causation of these various symptoms and their relation to the pathological condition. In combined degeneration we have in addition symptoms produced by the involvement of the posterior columns and roots. Among these may be reckoned the disturbance of the deep sensation, the ataxia, and anomalies of the bladder and rectum. Müller is an ardent believer in the sensory origin of spinal ataxia. In cases of primary lateral sclerosis the diminution in the hypertonia may be regarded as an indication of the subsequent involvement of the posterior columns. In addition, in the course of the disease other portions of the nervous system may be involved without necessarily the development of a diffuse process. (The article covers seventy-four pages, and it has been impossible to make an exhaustive abstract of it.)

11. *Etiology and Symptomatology of Syringomyelia*.—Curschmann divides his cases into groups. First, those in which syringomyelia involves primarily the extremity subjected to injury. The first case, a man of thirty-five, received a severe injury to the right hand. During the third week after this injury the movements of the hand became clumsy, and

there was pain, and a diagnosis of post-traumatic ascending neuritis was made. Subsequently paresis, degenerative atrophy, vasomotor and trophic disturbances developed, giving rise to a typical picture of syringomyelia. The second case, a man of fifty-four, received a severe injury to the right hand, followed by loss of a portion of the fourth finger. A little more than two months later he developed pain in the hand, and gradually typical symptoms of syringomyelia appeared in the arm. The third case, a man, received severe injury to the left hand. Six or eight weeks later paresis of this hand occurred, which increased until the left arm became useless. There was loss of the temperature sense, and the other characteristic symptoms of spinal gliosis. Fourth case, a man of thirty-four, received a splinter of iron in the right index finger. This was followed by infection, requiring amputation. Two or three months after the injury his movements became so clumsy that he was obliged to give up his work as a surveyor's assistant. There was gradual increase in the size of the hands due to thickening of the skin, atrophy of the muscles and the characteristic sensory disturbances. The clinical picture resembled Morvan's disease. Fifth case, a man of thirty-three, after an attack of rheumatism, with involvement of the heart and loss of compensation, was obliged to work from thirteen to sixteen hours a day for many weeks, using chiefly the right hand. Gradually this hand began to become fatigued more easily, trophic disturbances appeared, and when examined the condition was characteristic. The sixth case, a man of thirty-one, seven years previously had had a severe injury to the back of the head and upper portion of the spinal column. This was followed by symptoms of commotion of the central nervous system. Later there was apparently thrombosis of the veins of the left arm, and when finally examined he had the typical symptoms of syringomyelia. These cases can be divided into two groups: those in which the injury affected the periphery and those in which it affected the central nervous system. Two theories have been suggested, one, that the gliotic process existed and was in a sense activated by the injury; the other, that it was produced by an ascending neuritis. Curschmann, after discussing the evidences in favor of both views—particularly that resulting from the works of Schlesinger and Zappert—concludes that objectively the possibility of the traumatic origin or development of syringomyelia must be admitted. He then reports briefly a case of traumatic hysteria occurring in a man of thirty-three, in which there were some sensory disturbances in the left arm which might have suggested syringomyelia. He discusses very fully the differential diagnosis given by Laehr and Schlesinger, and concludes with his own views as follows. First, the character of the sensory disturbances is not a certain differential diagnostic criterion between hysteria and syringomyelia. This applies not only to the pain and temperature senses, but also such details as the behavior of the touch sensibility, the sharpness and character of the limitations of the sensory disturbances. However, the true dissociation of the sensory disturbances, either of the superficial sensory qualities to each other, or to the deep sensation, is a strong indication of syringomyelia. Disturbance of the muscular and joint sense, and of the stereognostic sense, while touch remains intact, is also evidence of an organic lesion. Particularly is this true of the distribution of the trigeminal nerve. Second, in regard to motility. Degenerative atrophies, progressively increasing paresis, and contractures are definite signs of syringomyelia. The nature of the occurrence of the paresis, chiefly because it is so difficult to determine from the history, cannot be considered of value. A quiet inten-

tion ataxia is rather in favor of gliosis and against hysteria. Third, the ordinary teaching of the skin and tendon reflexes holds good in these conditions. Fourth, vasomotor and trophic disturbances, if light in character, can only be used for differential diagnosis with great caution. Severe trophic disturbances which cannot be imitated by the hysterical patient, such as the arthropathies, are certain indications of syringomyelia.

12. *Paralysis of the Eye Muscles*.—A girl of sixteen had been working at the glazing of crockery. She developed symptoms of lead poisoning and difficulty with her sight. When examined there was found bilateral paralysis of the abducens nerves. Vision was reduced to five twentieths in each eye, and there was papillo-retinitis. The tendon reflexes were greatly reduced on the left side. The patient responded to treatment, and made a complete recovery. The number of cases in which visual disturbances occur as a result of lead poisoning is extremely small. Bilateral paralysis of the abducens has been recorded in only three cases. There is no case on record in which there was transient loss of the tendon reflexes unilaterally, particularly as in this case it seemed to involve the reflex arc. The second case, a man of fifty-nine, had had syphilis at the age of forty-seven. He had always smoked to excess. The abducens and oculomotor nerve on the left side were paralyzed. Vision was greatly reduced as a result of toxic retro-bulbar neuritis. There were no symptoms of tabes. The character of the retro-bulbar neuritis indicated nicotine poisoning. It was therefore assumed that the muscular pareses were due to the same cause, but no improvement occurred when the patient stopped smoking.

13. *Nervous Form of Disease with Superficial Characteristics of Myotonia*.—Von Bechterew reports the case of a man of twenty-one who had gradually developed a curious muscular condition in which it was difficult for him to make any spontaneous movement. If the eyes were closed they could only be opened by the aid of the hands. If the mouth was closed the same was true. If his fists were made he could only open them very slowly with the aid of the other hand. There were no myotonic reactions in any of the muscles, and no muscular atrophies. The tendon reflexes were normal; the cutaneous reflexes showed slight variation; sensation was normal. There was some fibrillary twitching of the tongue, and the patient, on account of the muscular condition, was unable to speak.

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